

FM63 Testing RS-232 and RS-485 TCP Link Mode

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Step 1. Understanding what is FM63XY RS232/RS485 TCP Link mode

In this mode link with an external device (for example PC) using text messages can be established. FM63XY has to be connected to the external device through RS232 or RS485. Any string of data coming to RS232 or RS485 will be routed to the server (if the link is currently active). Messages that are exchanged between FMB device and server, have to be packed in Codec.12 format. Here for TCP link establishment, we will be using Hercules. For sending messages from external devices to servers over FM63XY Terminal will be used.

Step 2. Setting parameters in the configurator for TCP Ascii mode test

First of all, in the FM63XY configurator you have to set parameters for RS232 or RS485 (depends on which RS232 or RS485 port you are using) in the global parameters window.

The screenshot shows a configuration window for 'External Devices' with the following sections:

- COM1 Settings:** Baudrate (115200), Mode (COM TCP Link), TimeStamp (Disable), CMD ID (To Server) (6), Start Byte (0), End Byte (0), Parity (None).
- COM2 Settings:** Baudrate (115200), Mode (Silent Mode), TimeStamp (Disable), CMD ID (To Server) (6), Start Byte (0), End Byte (0), Parity (None).
- TCP LINK mode buffering:** Disable/Enable (Enable).
- RS485 Settings:** Active (Disable), Baudrate (115200), Mode (Silent Mode).
- LLS Sensors Settings:** Addr 1 (0), Addr 2 (0), Addr 3 (0), Addr 4 (0), Addr 5 (0).

Here in the RS232 settings section, Baudrate can be chosen for any available. The mode has to be chosen for TCP Ascii.

2.1. Message Timestamp

Message Timestamp parameter is used to determine if it is necessary to include a timestamp in the RS232 TCP packet when sending it to the server. If the parameter is Enabled, then Codec 13 is used for data sending. Otherwise, Codec 12 is used.

You can also use RS485 which is also suitable for Ascii TCP Link mode. In order to make a link between FM63XY device and server, Domain and Target Server Port have to be set in the working device profile, GPRS data sending Settings section. When the right parameters are set, you can save the configuration to the FM63XY device.

Step 3. Establishing FM63XY test link with the server through Hercules

In this case, we have a PC that is considered to be a server and an external device at the same time. When FM63XY is configured and connected to the external device, next what we have to do is to start Hercules (Figure 2) which is on the server-side and will be used for sending/receiving messages.

(Please keep in mind that external device RX cable needs to be connected to FM63XY device TX cable and external device TX cable connected to FM63XY RX cable.)



Here you have to choose the TCP Server section from the upper menu. In the marked fields:

1. Write your server (PC) port and press Listen button;
2. In the Client connection status you will be able to see if a connection between server and FMB device has started successfully;
3. In the Send field, you can write a message that is packed in Codec.12 format which will be sent to the FM63XY device.

Step 4. Sending from server to external device over Hercules

When sending a message from Hercules, first you have to pack it in Codec.12 format. If you want to send a message to an external device over FM63XY from the server, a packed message should be pasted into the Send field in Hercules (Figure 2, marked field 3). The HEX format box should be unchecked if the text is in HEX format (for example:

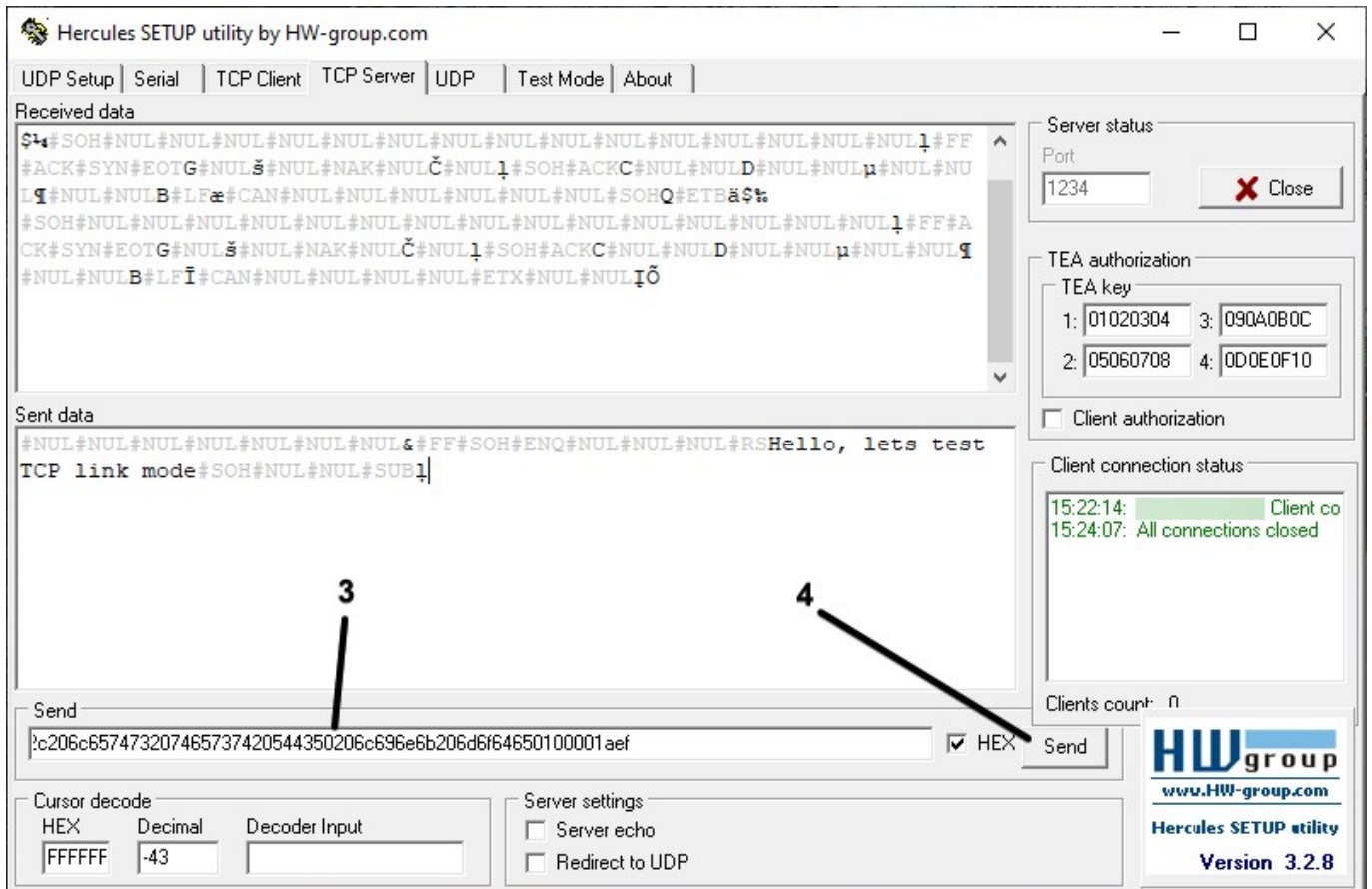
00000000000000260C01050000001e48656c6c6f2c206c657473207465737420544350206c696e6b206d6f64650100001aef etc.). When you press the Send button, you will see your message in the Sent data field (Terminal). If the message is sent successfully to FM63XY you can check it in the Terminal window.

Connect Port ½ cable one end to RS232 RX/TX cables on the FM63XY device and then connect the USB side to the computer. Please find which port is used for Port ½ cable in the device manager. Please select correct COM Port (1). In this case, we use COM21. Then press connects (2).



Open the Hercules application and just type your message in the marked field (3) and press the Send button (4). If sent successfully, you will see it in Hercules Sent data field (Figure 4). For example test text will be sent: Hello, lets test TCP link mode. In Codec.12 format it looks:

00000000000000260C01050000001e48656c6c6f2c206c657473207465737420544350206c696e6b206d6f64650100001aef



On terminal you should now receive a message:



Step 5. Sending from external device to server over Terminal

For testing data sending from external device to server, enter the text you want to send on Terminal and press send.



You can check if data is received to a server in Hercules. Sample text: Hello, lets test TCP link mode. Please keep in mind, that special chars (ASCII Names) need to be marked.



Links for download

1. [Hercules SETUP utility](#)
2. [Terminal download](#)